problems Mr. Theobald considers of most pressing importance are the bionomics of nematodes and the study of Strongylidæ. Nematodes are responsible for considerable losses to the hop-grower, the market-gardener, the strawberry-grower, and the farmer; they have long been known to damage cereal crops, and are now recognised as potato pests. The Strongylidæ are serious parasites of sheep and other animals, yet nothing is known of the life-history of the commonest form.

We reproduce a very good photograph of a female March moth (*Anisopteryx aescularia,* Schiff.) laying her "egg band" on a twig.

The report from the Analytical Laboratory deals with the more interesting of the 377 samples sent in for analysis.

In the report from the Botanical Department, Mr. S. T. Parkinson describes some interesting experiments that will be new to many people in this country. It will be remembered that, in 1909, Prof. Molisch, of Prague, published a paper in which he advocated that perennial plants, while still in their resting stage, should be dipped in hot water prior to forcing. In the resting period he distinguishes between the "unfreiwillig" and the "freiwillig" rest; the former, being inherent in the nature of the plant, cannot be altered; the latter, being dependent on the external circumstances, can be shortened. By steeping the plant in hot water at the proper time the "freiwillig" period is therefore cut out, and its cells spring into activity, thus it has such a start over the untreated plants that it comes to maturity well before they do.

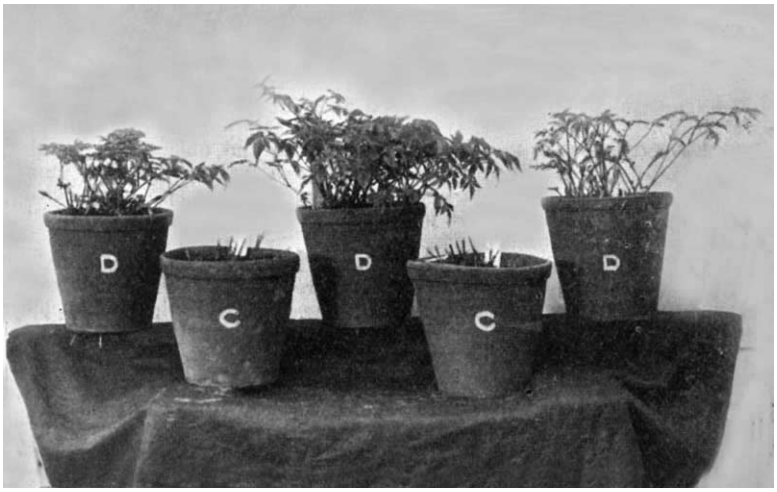

FIG. 2.—Photograph of "Dipped" (D) and Control (C) plants of Spirea. "Dipped" November 25; [illegible] photographed December 13. From the Journal of the South-Eastern Agricultural College.

Without committing himself to this particular hypothesis, Mr. Parkinson has carried out numerous experiments, and finds that an exposure of about twelve hours to a temperature of 95° F., or, in the case of soft plants, such as seakale, to 85° F., just after the period of "deepest rest," *i.e.* the end of November or beginning of December, led to very rapid growth. Numerous photographs are given, one of which is reproduced in Fig. 2. Further studies of this interesting problem will be awaited with interest.

Experiments are recorded by Mr. Garrad on the growth of tobacco for nicotine extraction. Nicotine makes an excellent wash for fruit-trees and hops, but its price (12*s*. per lb.) is too high. Mr. Garrad shows that he produced it at 6*s*. per lb., which, if it turned out a normal cost of production, would make a profitable industry. Mr. Garrad's Indian experience has stood him in good stead, and a continuation of the work would be very useful.

Mr. E. S. Salmon's report makes very sad reading. It seems but a few years ago since he announced that a gooseberry disease had appeared in Ireland and must inevitably spread to this country, with alarming results, unless certain precautions were adopted. Unfortunately his words fell on deaf ears, and it is a matter of history that no steps were taken to exclude the disease; trouble that had not yet appeared could not rouse the authorities to action. When the disease finally came over its seriousness was at first denied, and now that many hundred acres are affected and the disease is rapidly spreading, a plan of campaign has been organised in some, *but not in all,* districts. Thus Kent is efficiently inspected by trained inspectors, while Surrey and Sussex are not.

If the serious losses now being incurred could teach all concerned a few elementary facts about plant diseases, the lesson would still be worth having, however dearly bought, but we seem to be in for equal or greater losses from a potato disease known as the Wart Disease or Black Scab. The disease is here and is spreading, yet nothing adequate is being done. It is not surprising that the Pests Committee of the Central and Associated Chambers of Agriculture should, in a communication to the Board of Agriculture, "earnestly recall your attention to the last paragraph of their report, dated December 1st, 1908, in which they suggested that the Board should appoint an advisory committee of experts to assist the Board in dealing with plant diseases generally, as recommended by the Departmental Committee on the Fruit Industry."

A JUNGLE FOLK.[1]

THE Veddas of Ceylon have long been regarded as one of the most interesting of the varieties of mankind, and one way and another a good deal has been written about them in various journals and books, but the information was usually scrappy and not always trustworthy. An exception must, however, be made to the careful work of John Bailey in 1863, and the sympathetic investigations of Hugh Nevill, whose valuable notes are to be found in a scarce journal, *The Taprobanian.* In "Ancient Ceylon" (1909), Mr. H. Parker gives a useful summary of our knowledge of the Veddas, together with the results of his own observations on the village Veddas. For the physical anthropology we are mainly indebted to Virchow (1881), who studied the craniology of the Veddas, and to the magnificent memoir, "Die Weddas von Ceylon," by the cousins Sarsin; this monograph deals also with their material culture, but the account of Vedda sociology is much less satisfactory. It was evident to ethnologists that the sociology and religion of the Veddas needed to be studied carefully by modern methods of sociological field research, as these people undoubtedly are little-modified representatives of a very ancient human stock, and there was a danger, owing to the very small number of the wilder bands and their gradual adoption of a more civilised mode of life, that their customs and beliefs might become obsolete. On being approached on the subject, the Ceylon Government, with their customary public spirit, voted a liberal grant for this purpose, and Dr. C. G. Seligmann was selected to undertake the research. He was accompanied by Mrs. Seligmann, and to her in no small measure must be credited the success of the expedition. The Veddas are a shy and intensely jealous people, but the presence of a woman in the party led to very friendly relations being established, and Mrs. Seligmann proved herself to be a first-class investigator in the field. Their results are now published as one of the Cambridge Archæological and Ethnological Series of the Cambridge University Press.

---

[1] "The Veddas." By Dr. C. G. Seligmann and Brenda Z. Seligmann. With a chapter by Dr. C. S. Myers and an appendix by A. Mendis Gunasekara. Pp. xx+463+map. (Cambridge: The University Press, 1911.) Price 15*s*. net.

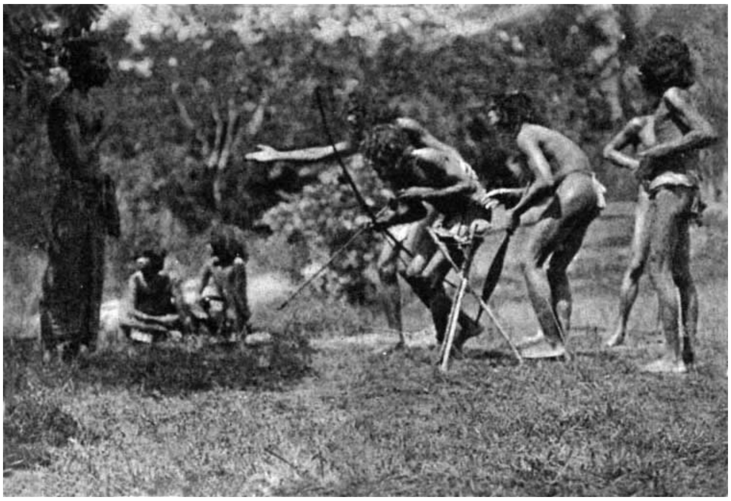

FIG. 1.—Kirikoraha ceremony. The shaman tracking the sambar (Henebedda). From "The Veddas."

Mr. Parker is inclined to believe that the forebears of the present few hunting Veddas were more civilised, and that the existing condition is a reversion to the forest life of their remote forefathers; the Seligmanns, however, regard the hunting Veddas as direct survivals of the primitive Veddas, and the traditions of a higher state of culture as mainly due to confusion between the Veddas and Kandayans of mixed Vedda descent, who until recently called themselves Veddas, or were known as such to their neighbours. A brief account is given of the various Vedda communities; the Danigala Veddas are the show "wild Veddas" described by so many travellers; although really well-off, they pose as poor, morose, wild men of the jungle—they are, in fact, professional savages.

The Vedda system of relationship is a late form of the kind known as classificatory; the working basis is the marriage of the children of brother and sister, but not of two brothers or sisters. Before marriage a man pays at least as much regard to his future father-in-law as to his own father, but after marriage the association between father-in-law and son-in-law becomes very intimate. The social system is an exogamic clan organisation with female descent. Two clans are regarded as socially superior to the others, and their members do not marry into the inferior clans. The Veddas greatly prefer living in rock-shelters to huts, but they shift their home two or three times a year as the season demands. Most of the caves shelter several families, but each family keeps strictly within its own limits. There are no puberty ceremonies for either sex, except among certain Veddas who have been much influenced by Tamils or Sinhalese. The Veddas marry young, and are strictly monogamous. A rigid sexual morality prevails, but at present, among the more sophisticated groups, an unmarried girl is allowed considerable liberty with regard to the youth allotted to her. The country is divided into hunting lands for the different groups, within which each individual has the exclusive hunting rights of a particular area or areas; when dying, a man generally gives his land to his sons, and not to his sons-in-law, but no landed property passes without the consent of the grown men of the group. Trespass is almost unknown. The religion of the Veddas is essentially a cult of the dead; with this is associated the cult of spirits, *yaku*, of certain long-dead Veddas who may be regarded as legendary heroes. The chapters dealing with the magico-religious practices and beliefs are of great interest and importance. The ceremonial dances are described and illustrated with great detail; the majority are pantomimic, and are performed with the object of becoming possessed by a *yaku*; the Seligmanns believe that there is no considerable element of pretence in the performance of the shaman.

Dr. C. S. Myers has a chapter on music, based on thirty-four phonographic records. In the Vedda music we seem to meet with the very beginnings of melody-music; there is no other people in whose music the gradual construction of music on such simple lines can be discerned. A number of Vedda songs have been transliterated and translated by Mr. A. M. Gunasekara, and Mr. Parker has done the same for the invocations. The senses of the Veddas were also tested. Enough has been said to show that this book

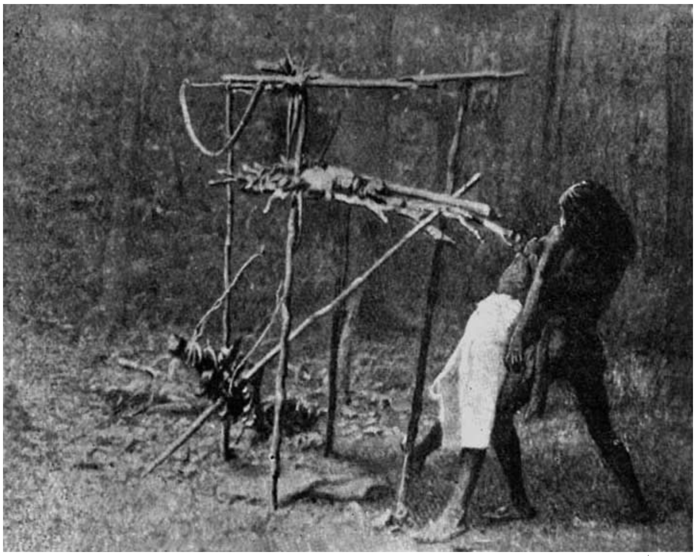

FIG 2.—Bambura Yaka ceremony. The boar is at length killed; the possessed shaman collapsing into the arms of a supporter (Sitala Wanniya). From "The Veddas."

is of first importance, and it may be considered as the final word on the subject, as it is improbable that we shall ever learn much more about the Veddas. The Ceylon Government is to be congratulated in having secured the services of Dr. and Mrs. Seligmann for this important research. A final word of praise is due to the number and excellence of the photographs; those illustrating various ceremonies are of exceptional interest.

A. C. HADDON.

THE COAST EROSION COMMISSION.

IN July, 1906, a Royal Commission was appointed to inquire and report as to the encroachment of the sea on the coasts of this country, and as to what means are desirable for the prevention of such damage; also as to the reclamation of tidal lands as affecting the subject of unemployment. Two years later the duties of the Commission were extended to an inquiry as to whether it is desirable to make an experiment in afforestation as a means of increasing employment during periods of depression.

The Commission consisted of thirteen members, representing landowners, experts in coast defence works, geologists, lawyers, the Board of Trade and other Government departments. The Hon Ivor Guest was appointed chairman. The first report, containing the minutes of evidence heard in the earlier part of the inquiry, was issued in 1907; the second report on the subject of afforestation in January, 1909; that now issued being the final report containing the findings of the Commission.[1]

The witnesses who appeared before the Commission represented all branches of the subject, including representatives of the Board of Trade, local authorities and their officers having charge of the sea coast in England, Ireland, and Scotland, owners of land abutting on the coast, engineers having expert knowledge of sea defence works, and geologists. Committees of the Commissioners made inspections of various parts of the coasts where erosion was going on, and where reclamations had been made; and also of the works of sea defence in Holland and Belgium.

As the subject of coast erosion had not been dealt with by any previous Commission, the Commissioners thought it necessary to make an ample and thorough examination of the whole subject. The report is divided into an inquiry into the physiographical and geological conditions affecting the coast-line; an estimate of the extent of erosion and accretion of land; and where artificial reclamation has been carried out on the coasts and in tidal estuaries; engineering questions as to the type of work which has been adopted for sea defences; the central and local administration of the foreshore; and whether it is desirable to promote facilities for reclaiming tidal land; and also as to whether the defence of the coast is a national duty towards which grants of public funds ought to be made.

The inquiries of the Commission extended over five years, and the resulting report gives a very clear and able digest of the large amount of evidence taken. It deals with the subject in an exhaustive and comprehensive manner, and contains an able account of the technical considerations which should govern the design of works of defence. The finding of the Commissioners appears to be a fair exposition of the evidence brought before them, and it deals in an even-handed way with the rights of the owners of land abutting on the coast, on one hand, and of the State, as representing the other tax-paying members of the community, on the other.

The recommendations of the Commissioners are practically unanimous. There are reservations as to some of the subjects dealt with, the most important relating to the subject of the obligation of the State to protect the sea coasts.

The findings of the Commissioners may be summarised as follows:—

That there is a considerable amount of erosion and consequent loss of land taking place on certain parts of the coast; on the other hand, land is being reclaimed from the sea. Taking the last thirty-five years, it was shown by the evidence of the Ordnance Department that 6640 acres have been lost, while 48,000 acres have been gained by reclaiming tidal lands. This reclaimed land is due principally to the accretion of material brought down in suspension by the rivers. The amount and rate of erosion along the coast is governed by the nature and form of the coast. The natural protection of the coast is afforded by accumulations of sand and shingle derived almost entirely from the material eroded from the cliffs. The amount of beach material therefore depends on the amount of erosion going on, and the quantity is limited, and is not inexhaustible.

The material eroded travels along the coast in definite directions, due to the action of the tides, the wind and the waves. Its travel may be arrested by projecting headlands and river mouths.

Much damage to the coast has been incurred by the removal of this beach material in some places for road-making and constructional purposes.

The evidence shows that if works of protection are carried out with due regard to the local peculiarities of the district to be dealt with, and on sound engineering lines, erosion of the coast may be prevented. The fact also is disclosed that a very large amount of money has been wasted on groynes, sea-walls, and other defence works, owing to a want of knowledge of the conditions prevailing in the neighbourhood where the works were carried out; also that works designed solely with regard to the protection of a particular line of coast may lead to increased erosion on the coast to the leeward side, owing to the stoppage of the travel of the beach material. If the land to be protected is ordinary agricultural land, the cost of protection may be greater than the value of the land to be protected.

The Commissioners advise that the whole care of the coast should be placed under the administration of the Board of Trade, who should be constituted the central authority of the United Kingdom for the purpose of sea defence. That the Board should be invested with power to enable it to control the removal of materials from the shore, making it illegal to remove any sand, shingle, or stone without their previous consent being obtained; the approving of works of construction on the shore; the supervision of existing local authorities concerned with sea defences, and, where required, the creation of new authorities for the purposes of supervision of the coast to employ a staff of scientific experts to secure systematic observation of the movement of beach material and for watching the coast in order to prevent removal of such material where doing this would be injurious; also to sanction the borrowing of money by local authorities for defence works, and to determine the period over which repayment should be made. At present this duty rests with the Local Government Board, which only allow a period of ten years for groynes and twenty years for more solid works. This limit appears

---

[1] Third and Final Report of the Royal Commission on Coast Erosion. The Reclamation of Tidal Lands and Afforestation. (London: Published by his Majesty's Stationery Office, 1911.) Price 3s.